

REMARKS

Reconsideration of the above-identified patent application in view of the present amendment and the following remarks is respectfully requested.

This amendment cancels claims 1 and 43-50 and adds new claims 67-75. It is also respectfully acknowledged that claims 15-22, 27, 29-32, 40, 41, and 51-66 were indicated as being allowed.

New claim 67 recites an apparatus for helping to protect a vehicle occupant. The apparatus comprises an inflatable vehicle occupant protection device and an inflator that includes a plurality of microelectromechanical system devices (MEMS devices). Each MEMS device includes an array of selectively actuatable inflation fluid sources. Each one of the actuatable inflation fluid sources is actuatable for providing inflation fluid for inflating the inflatable vehicle occupant protection device. The apparatus also includes vehicle electric circuitry that is operatively connected to the plurality of MEMS devices and is configured for actuating the actuatable inflation fluid sources. The vehicle electric circuitry is responsive to received sensory inputs for selectively actuating the actuatable inflation fluid sources of the plurality of MEMS devices.

New claim 67 patentably defines over Thorn, U.S. Patent No. 4,928,991, and Faigle et al., U.S. Patent No. 5,450,405, whether taken singularly or in combination, for at least the following reasons:

1. Neither Thorn nor Faigle et al. teaches or suggests that each MEMS device includes an array of selectively actuatable inflation fluid sources.

Thorn teaches an inflator assembly 10 that contains eight gas generating cartridges 12. Each of the eight gas generating cartridges 12 includes an electric igniter 18. A printed circuit board 24 electrically connects the electric igniters 18 to a power supply 20. (Thorn, Col. 2, lines 20-32). The Examiner has taken the position that the gas generating cartridges 12 and the printed circuit board 24 collectively form a microelectromechanical system device (MEMS device). Even assuming that Thorn teaches a MEMS device, Thorn fails to teach or suggest an array of selectively actuatable inflation fluid sources.

There is no teaching or suggestion in Thorn that the gas generating cartridges 12 are selectively actuatable. Thorn discloses that the orientation of elements, with the plurality of gas generating cartridges 12 on or adjacent the rear wall of the inflator and aspiration vents on the sidewalls of the inflation, improves the pumping ratio of the inflator as compared to known aspirating inflators. (Thorn, Col. 2, lines 60-68). Thorn also discloses that the gas flow from the multiple gas generating cartridges 12 aspirates air through the sidewall air inlet openings 30. (Thorn, Col. 2, lines 49-53). Thus, Thorn suggests to one of ordinary skill in the art that the gas generating cartridges 12 are not selectively actuatable, but must all be actuated together for providing the improved pumping ratio.

Faigle et al. teaches four sources 22, 24, 26, and 28 of inflation fluid. The four sources 22, 24, 26, and 28 of inflation fluid are selectively actuatable for providing inflation fluid. The four sources 22, 24, 26, and 28 of inflation fluid of Faigle et al., however, are not part of a MEMS device. Further, there is not teaching or suggestion in Faigle et al. to include the sources 22, 24, 26, and 28 of inflation fluid as part of a MEMS device. Additionally, as set forth above, there is no teaching or suggestion for providing selectively actuatable sources of inflation fluid in the inflator of Thorn. Therefore, there is no suggestion or motivation for combining the reference teachings of Thorn and Faigle et al. Thus, allowance of claim 67 is respectfully requested.

2. Thorn and Faigle et al. fail to teach or suggest vehicle electric circuitry that is responsive to received sensory inputs for selectively actuating the actuatable fluid sources of the plurality of MEMS devices.

As set forth above, neither Thorn nor Faigle et al. teaches or suggests a MEMS device having selectively actuatable inflation fluid sources. Therefore, Thorn and Faigle necessarily fail to teach or suggest vehicle electric circuitry that is responsive to received sensory inputs for selectively actuating the actuatable inflation fluid sources of the plurality of MEMS devices. Since neither Thorn nor Faigle et al. teaches or suggests this feature of claim 67, allowance of claim 67 is respectfully requested.

3. Neither Thorn nor Faigle et al. teaches or suggests a plurality of MEMS devices.

The Examiner has taken the position that the gas generating cartridges 12 and the printed circuit board 24 of Thorn collectively form a microelectromechanical system device (MEMS device). Thorn, however, fails to teach or suggest an inflator that includes a plurality of MEMS devices. Faigle et al. also fails to teach or suggest a plurality of MEMS devices. Since neither Thorn nor Faigle et al. teaches or suggests this feature of claim 67, allowance of claim 67 is respectfully requested.

New claims 68-75 depend from claim 67 and are allowable for at least the same reasons as claim 67. Additionally, claims 68-75 are allowable for the specific limitations of each claim.

Specifically, claim 68 recites that each actuatable inflation fluid source of the array of actuatable inflation fluid sources for each MEMS device is individually actuatable. Claim 68 also recites that the vehicle electric circuitry is operable for selectively actuating one or more of the individually actuatable inflation fluid sources. Neither Thorn nor Faigle et al. teaches or suggests a MEMS device having individually actuatable inflation fluid sources. Additionally, neither Thorn nor Faigle et al. teaches or suggests vehicle electric circuitry that is operable for selectively actuating one or more of the individually actuatable inflation fluid sources. Therefore, allowance of claim 68 is respectfully requested.

Claim 69 recites that the inflator further includes a housing. The plurality of MEMS devices includes terminal pins for mounting to the housing. The vehicle electric circuitry is operatively connected to the plurality of MEMS devices through the terminal pins. Thorn and Faigle et al. fail to teach or suggest the limitations of claim 69. Therefore, allowance of claim 69 is respectfully requested.

Claim 72 recites that a means for actuating the individual actuatable inflation fluid sources includes a plurality of individually energizable electric heating elements. Each one of the individual actuatable inflation fluid sources has an associated one of the plurality of individually energizable electric heating elements. Thorn and Faigle et al. fail to teach or suggest the limitations of claim 72. Therefore, allowance of claim 72 is respectfully requested.

In view of the foregoing, it is respectfully submitted that the above-identified patent application is in condition for allowance, and allowance of the above-identified patent application is respectfully requested.

Please charge any deficiency or credit any overpayment in
the fees for this amendment to our Deposit Account

No. 20-0090.

Respectfully submitted,



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